

Seat No.	
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**B.E. (Comp. Sci. and Engg.) (Semester - VIII) (Revised)**  
**Examination, April - 2017**

**REAL-TIME OPERATING SYSTEM**

**Sub. Code : 67826**

**Day and Date : Saturday, 29 - 04 - 2017**

**Total Marks : 100**

**Time : 2.00 p.m. to 5.00 p.m.**

- Instructions :**
- 1) Solve Any Three Questions from each section.
  - 2) Figures to right indicate full marks.

**SECTION - I**

- Q1) a)** What is need of real time systems? Explain different types of real time systems. [8]
- b)** Explain how devices are interfaced to the CPU using interrupts with block diagram. [8]
- Q2) a)** What is DMA? Explain in detail DMA operation with the help of timing diagram. [8]
- b)** What are pseudokernels? Explain following pseudokernels in detail: [8]
- i) Polled loop
  - ii) Synchronous polled loop
  - iii) Cyclic Executives
  - iv) Co-routines
- Q3) a)** Explain Foreground/Background systems in detail. [8]
- b)** What is priority inversion? Explain priority ceiling protocol. [8]

**P.T.O.**

Q4) Write a note on (Any Three):

- a) Tristate logic.
- b) Test-and-Set Instruction.
- c) RISC vs CISC.
- d) Ring Buffers.

### SECTION - II

Q5) a) With block diagram explain requirement engineering process for real time system. [8]

b) What are formal methods in software specification? State its limitations. [8]

Q6) a) Explain real time features of C# and Java. [8]

b) What are state charts? State various components of state charts. How concurrency is represented? [8]

Q7) a) Explain Halstead's metrics in detail. [8]

b) Explain cost estimation using COCOMO. [8]

Q8) Write a note on (Any Three): [18]

- a) McCabe's metric.
- b) Assembly languages.
- c) Petri nets.
- d) RTLinux.